

REMARKS

Added Claims 44-46 find support in page 18, line 4, and page 17, line 25.

Claims 23 to 43 are pending in the Application.

Claims 24-41 stand rejected under 35 U.S.C. 112 first paragraph the Examiner alleging the term "substituted" recited in Claims 24 and 29 to be non-enabling "until the named functional groups or substituents found in the specification are recited in the claims".

Applicants respectfully submit that the art-skilled, the intended reader of the patent would readily appreciate that the substituents at issue are those that would not interfere with the intended use of the claimed composition. In view of the readership it would be both unnecessary and impractical to list all the suitable substituents. Supporting Applicants' position is the wide use of the term in the patent literature, see for instance U.S. Patents 6,528,561 (column 2 line 30 et seq.) and 6,388,046 (Col. 3 line 56). Reconsideration and retraction of the rejection are requested.

Claims 29,30 and 36 stand rejected under 35 U.S.C. 112 second paragraph, the term "derivative" recited in Claim 29 is said to be "indefinite absent functional groups".

The "derivatives" at issue refers to those of unsaturated carboxylic acids as components of a mixture grafted to a graft backbone. Considering the readership of the text in question and the routine use of the term in the patent literature (see U.S. Patents 6,613,822 (see Claim 7) and 6,528,561(see Claim 5) the Applicants contend that the term is readily understood by the art-skilled. Reconsideration and retraction of the rejection are requested.

The rejection of Claim 30 is predicated on Examiner's perception that term EP(D)M is indefinite.

EP(D)M is a term of art – see enclosed copy of page 343 of the Condensed Chemical Dictionary. It is also defined in the specification – page 11 line 22. Its recitation in Claim 30 cannot reasonably raise an indefiniteness issue.

Claim 36 has been amended adopting Examiner's suggestion.

The invention is directed to a thermoplastic molding composition comprising

- (A) at least one resin selected from among polycarbonate and polyester carbonate,
- (B) a graft polymer,
- (D) phosphonate amine and
- (E) an inorganic powder the particle size of which is 200 nm at most.

The invention resides in the finding that the composition features improved mechanical properties and flame resistance, the improvement being over corresponding composition that contain none of component (E). Attention is respectfully directed to the results of the working examples - table in page 34. Accordingly, set in comparison to a largely identical composition that includes none of component E, the inventive composition features greater notched impact strength at low temperatures, higher Vicat B temperature, weld line strength, resistance stress cracking, flammability rating and elongation at break.

Claims 23-43 stand rejected under 35 U.S.C. 103(a) as unpatentable over DE 197 34 661 in view of Paulik (U.S. Patent 5,844,028).

DE 197 34 661 (herein the '661 document) is considered -based on U.S. Patent 6,569,930, its substantive equivalent - to disclose a flame retardant polycarbonate composition that contains a graft copolymer a particularly structured phosphorous compound and a component corresponding to the presently claimed component (E). The composition is seen to additionally feature advantageous stress cracking resistance.

U.S. Patent 5,844,028 (the '028 document) disclosed phosphate amine as a flame retardant in polymeric materials.

While the components of the present composition have been disclosed in the art their combination in the present context is not suggested. The law is clear on that the mere fact that the components are old does not make their combination obvious. A reason to combine needs to be shown for the combination to be legally tenable. It is not clear why one will be motivated to replace the specifically structured phosphorous compound required by the '661 document with the phosphate amine of the '028 document. It is not at all clear from the record that the proposed substitution would have no adverse effect on the advantageous properties, including stress cracking resistance, that characterize the composition of the '661 document.

Applicants respectfully submit that the prima facie case of obviousness has not been made and the rejection based thereon is untenable.

Claims 23-43 stand rejected under 35 U.S.C. 103(a) as unpatentable over Gosens et al (U.S. Patent 5,204,394) in view of DE 197 34 661 and Paulik (U.S. Patent 5,844,028).

Gosens disclosed a composition that contains polycarbonate, a graft, an oligomeric phosphate conforming to a particular formula, further flame retardants and conventional additives. The secondary documents were discussed above and their shortcomings in the present context noted. It is not seen how or why Gosens may be combined with the secondary references in a legally permissible fashion to suggest the presently claimed invention. Applicants submit that the cited art falls short of the prima facie case and that the rejection thus based is untenable.

Reconsideration of the application in view of the above is requested.

Believing the above represent a complete response to the Office Action and that the application is in condition for allowance, applicants request the earliest issuance of an indication to this effect.

Respectfully submitted,

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"EPONITE" 100

EP. (1) Abbreviation for extreme pressure, as applied to lubricants. (2) Abbreviation for ethylene-propylene.

EPA. Abbreviation for Environmental Protection Agency (q.v.).

EP black. Abbreviation for easy processing channel black. See carbon black.

EPDM. Abbreviation for a terpolymer elastomer made from ethylene-propylene diene monomer. See ethylene-propylene terpolymer.

"Exep."²⁶⁷ Trademark for a series of epoxy resin extenders.

Uses: Extension and dilution of epoxy resin systems for all applications.

ephedrine (1-phenyl-2-methylaminopropanol)

$C_6H_5CH(OH)CH(NHCH_3)CH_3$. Optically active (levorotatory) form. See racephedrine for the inactive mixture of isomers.

Properties: White to colorless granules, pieces or crystals; unctuous to touch; hygroscopic; gradually decomposes on exposure to light. Soluble in water, alcohol, ether, chloroform, and oils. M.p. 33–40°C; b.p. 255°C (decomposes).

Derivation: Isolation from stems or leaves of Ephedra, especially Ma huang (China and India).

Grades: Technical; N.F.

Use: Medicine (usually as hydrochloride).

epi. (1) A prefix denoting a bridge or intramolecular connection, e.g., epoxide.

(2) An abbreviation for epichlorohydrin.

"Epiall."¹⁷⁵ Trademark for a series of epoxy molding compounds.

Properties: Excellent electrical resistivity; high physical strength; flame resistance; good dimensional stability; outstanding resistance to high temperature (500°F). Resistant to virtually all solvents and most chemicals; good colorfastness in sunlight and heat; fungus resistance; water absorption, 0.17% in 48 hours.

Available in mineral glass-filled and long glass fiber-filled grades.

epichlorohydrin (chloropropylene oxide; epoxide) An epoxide. CH_2OCHCH_2Cl .

Properties: Highly volatile, unstable, liquid. Chloroform-like odor; miscible with most organic solvents; slightly soluble in water. Sp. gr. 1.1761 (20/20°C); b.p. 115.2°C; wt./gal. 9.78 lb; vapor pressure 12.5 mm (20°C); f.p. –58.1°C; viscosity 1.12 cp (20°C); refractive index (n 25/D) 1.4358; flash point 93°F (TOC).

Derivation: By removing hydrogen chloride from dichlorohydrin.

Hazard: Toxic by inhalation, ingestion, and skin absorption. Strong irritant. Tolerance, 5 ppm in air. Flammable, moderate fire risk.

Uses: Major raw material for epoxy and phenoxy resins; mfg. of glycerol; curing propylene-based rubbers; solvent for cellulose esters and ethers; high wet-strength resins for paper industry.

See also "Hydrin," "Herdor."

epichlorohydrin triethanolamine cellulose. See EC-TEOLA-cellulose.

"Epi-Cure."⁴⁷⁴ Trademark for curing agents for epoxy resins.

epimer. An isomer which differs from the compound with which it is being compared only in the relative positions of an attached hydrogen and hydroxyl. The isomerism may be represented as —HCOH— and —HOCH—. It is common in sugars. See also diastereoisomer.

epinephrine (*l*-methylaminoethanolcatechol; "Adrenalin.") $C_8H_7(OH)CH(OH)CH_2NHCH_3$. A hormone of the adrenal glands.

Properties: Light brown or nearly white, odorless crystalline powder; affected by light; m.p. 211–212°C; specific rotation (25°C) –50° to –53.5°; sparingly soluble in water; insoluble in alcohol, chloroform, ether, acetone, oils. Readily soluble in aqueous solutions of mineral acids, sodium hydroxide and potassium hydroxide.

Derivation: From the adrenal glands of sheep and cattle or synthetically from pyrocatechol.

Grade: U.S.P.

Use: Medicine.

"Epiphen."⁶⁵ Trademark for an epoxy resin in liquid form. "Epiphen" ER-823 is used in adhesives for rubber, steel, aluminum or glass. Catalyst is supplied for specific end uses.

epitaxial growth. An oriented crystal growth between two crystalline solid surfaces in which the surface of one crystal offers suitable positions for deposition of a second crystal. This behavior is characteristic of some types of high polymers.

"E P Mudlube."²³⁶ Trademark for a solution of modified higher organic acids which imparts extreme pressure lubricating properties to drilling muds.

EPN (O-ethyl O-para-nitrophenyl phenylphosphorothioate) $C_6H_5P(C_2H_5O)(S)OC_6H_4NO_2$.

Properties: Light-yellow crystals; m.p. 36°C; sp. gr. 1.5978 (30°C). Insoluble in water; soluble in most organic solvents. Decomposes in alkaline solutions.

Grades: Wettable powders and dusts.

Hazard: Toxic; a cholinesterase inhibitor. Tolerance, 0.5 mg per cubic meter of air. Absorbed by skin. Use may be restricted.

Uses: Insecticide; acaricide.

Shipping regulations: (Rail, Air) Organic phosphate, solid, n.o.s. Poison label. Not accepted passenger planes.

"Epoxy" Resins.¹²⁵ Trademark for a group of thermosetting resins, best described as epoxy acrylates, designed to combine the performance properties of epoxy resins and the application features of unsaturated polyesters. Used in reinforced structures.

"Epolene." Trademark for a series of low-molecular-weight polyethylene resins. Available in both emulsifiable and nonemulsifiable types.

"Epon" Curing Agent.¹²⁵ Trademark for curing agents by which "Epon" resins can be hardened to form clear tough polymers with high physical strength, excellent chemical resistance, and good electrical resistance.

"Eponite" 100.¹²⁵ Trademark for a water-dispersible liquid epoxy resin. Used in the textile industry alone or in combination with hydrolyzed or partially hydrolyzed polyvinyl acetate, starches, gums, cellulose ethers, selected resins, or other chemical finishing agents to impart crease resistance, shrinkage control, embossing, stiffness, softness or other fabric properties.